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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,804	07/24/2001	Surya Prakash	06618/408002/CIT2942-D	7226

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EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 08/26/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,804

Applicant(s)

PRAKASH ET AL.

Examiner

Julian A. Mercado

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "a second ionomer" in line 1. This limitation is deemed indefinite as there is no positive recitation of a "first ionomer" for a second and mutually distinct ionomer to be further present. Barring a first ionomer being claimed, it appears to the examiner that only one type of ionomer is present.

Claim 5 recites the limitation "the ionomer" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is suggested to insert --further comprising an ionomer-- before "wherein".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

Art Unit: 1745

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Cabasso et al. (U.S. Pat. 5,783,325).

Regarding independent claim 1 and dependent claim 2, Cabasso et al. teaches a catalyst ink for a fuel cell comprising a Pt catalytic material and poly(vinylidene fluoride). (col. 4 line 50-56, col. 6 line 8-21)

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Narayanan et al. (U.S. Pat. 5,945,231)

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding independent claim 1 and dependent claims 2-3, Narayanan et al. teaches a catalyst ink for a fuel cell comprising a Pt:Ru catalytic material and poly(vinylidene fluoride). (col. 7 line 38-42, col. 8 line 49-51) To the extent that the claim is understood by the examiner for the reasons discussed under 35 U.S.C. 112, second paragraph (discussion above), the catalyst ink comprises a Nafion[®]-based ionomer solution, further disclosed as being of tetrafluoroethylene, i.e. polytetrafluoroethylene and perfluorovinylethersulfonic acid. (col. 3 line 60 et seq., applies to dependent claims 4-5)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denton et al. (U.S. Pat. 5,865,968) in view of Cabasso et al. as applied to claims 1 and 2 above and as evidenced by the Dupont™ Nafion® PFSA Polymer Dispersions product information guide.

Regarding independent claim 1 and dependent claims therefrom as additionally noted, Denton et al. teaches a catalyst ink for a fuel cell comprising a catalytic material such as Pt, *inter alia*. (col. 4 line 14-24, also applies to dependent claim 2) The catalyst ink comprises a Nafion®-based ionomer, notably in liquid form such as in a 9.5% aqueous dispersion (col. 8 line 8) To the extent that the claim is understood by the examiner for the reasons discussed under 35 U.S.C. 112, second paragraph (discussion above), regarding dependent claims 4 and 5 Nafion® would naturally flow to comprises a copolymer of tetrafluoroethylene and perfluorovinylethersulfonic acid, as evidenced by the Dupont™ Nafion® PFSA Polymer Dispersions product information guide.

As to dependent claim 3, Denton et al. does not explicitly teach the catalytic material to comprise Pt and Ru. However, Denton et al. teaches that both Pt and Ru, *inter alia*, are part of a preferred group of metals for the catalytic material. It would not require undue experimentation for the skilled artisan to employ both Pt and Ru since Denton et al. specifically teach that one or

Art Unit: 1745

more of these metals may be used. Additionally, Denton et al. specifically teach that Pt:Ru catalytic metal pairs are well-known such as found in conventional anodes using "20 wt % platinum, 10 wt % ruthenium catalyst". (col. 6 line 24)


Denton et al. does not explicitly teach the catalyst ink to comprise poly(vinylidene fluoride), as recited in independent claim 1. However, Cabasso et al. as discussed above teaches a catalyst comprising poly(vinylidene fluoride). The skilled artisan would find obvious to employ poly(vinylidene fluoride) as part of the catalyst ink in Denton et al.'s invention for reasons such as employing an inexpensive polymer to replace the more expensive PTFE polymer. (see Cabasso et al., col. 6 line 8-33) Of note, Denton et al. uses such PTFE polymers as part of its catalyst ink mixture. (see Denton et al., col. 7 line 57 et seq.)

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



jam



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